Axis and Rusa, ultimately culminating in the wonderfully complex antlers of *Cervus Sedgwickii* of the forest bed, and *C. dicranios* of the Val d'Arno, and in the gigantic antlers of the pleistocene, and pre-historic Irish elk. It must, however, be pointed out that the *Cervus Matheronis* of the upper miocene, identified by Prof. Gaudry with the Axis, has no relation with that animal, as may be seen by the examination of the most perfect antlers yet discovered of the former animal, in the British Museum. A more rudimentary form of antler (*Procervulus*, Gaudry) even than the Muntjac has been discovered in the middle miocene strata of Thenay, without a burr, which was, like ordinary horns, persistent through the life of the animal.

We have merely touched upon some of the questions raised in this work, which occupies most important ground in the evolution controversy, and may be looked upon as one of the first fruits of the principles laid down by Mr. Darwin in the "Origin of Species."

W. BOYD DAWKINS

AMERICAN GEOLOGICAL SURVEYS

United States Geological Exploration of the Fortieth Parallel. By Clarence King, Geologist in Charge. Vol. II. *Descriptive Geology*, 1877. Vol. IV. *Ornithology and Palæontology*, 1877. (Washington: Government Printing Office, 1877.)

THE important survey of a portion of the north-western states of America, which was commenced by Clarence King and his able assistants in 1867, has now, after ten years of arduous labour, been brought to a close. In the original scheme drawn up for the publication of the results of this survey it was proposed that the observations of the surveyors should be published in five volumes, devoted to the following subjects:—

- I. Systematic Geology.
- II. Descriptive Geology.
- III. Mining Industry.
- IV. Zoology and Palæontology.
- V. Botany.

The third of these volumes was prepared and issued soon after the commencement of the survey. It abounds with valuable details concerning the rich ore deposits of the north-west and the methods by which they can best be worked. It is difficult to know which to admire most—the accuracy and beauty of illustration of this volume or the characteristic energy and promptitude with which it was produced in order to meet a pressing want.

In 1876 a supplementary volume numbered VI., not contemplated in the original scheme, was published; it deals with the subject of Microscopic Petrography, and is from the pen of Prof. Zirkel, of Leipzig. As this work has already been noticed in the pages of NATURE, we need do no more on the present occasion than refer to the circumstances under which it was published.

Two other volumes, those numbered II. and IV. are now before us, and amply sustain the high reputation which Mr. Clarence King and his indefatigable fellow-workers have acquired for energy and zeal in the prosecution of their important task, no less than for great geological knowledge and literary ability.

The volume on Descriptive Geology consists of a series

of chapters giving full and accurate accounts of the geological features of the Rocky Mountains, the Green River Basin, the Utah Basin, the Nevada Plateau, and the Nevada Basin respectively, the descriptions being from the pens of Arnold Hague and S. F. Emmons. The rocks exposed in this vast area include representatives of the whole series of geological formations from the Archæan to the Post-pliocene, together with many plutonic and volcanic masses belonging to various geological periods. The descriptions are of the most minute and careful character, and are interspersed with valuable analyses of the rocks described.

One of the most useful features of this volume is the series of twenty-six lithographic plates illustrating the grand and peculiar scenery of the district. These are admirable copies of photographs taken upon the spot, and they are probably, without exception, the most successful attempts to illustrate scenery in this manner that have ever been made. We would especially instance Plates V. and VI., illustrating the Tertiary bluffs near Green River City, Wyoming, and Plate XIV., showing the characters of the Wahsatch Limestone Cliffs, Provo Cañon, Wahsatch Range, as presenting the characteristic features of rock-masses in a manner which cannot fail to be appreciated by every geologist who has had opportunities for extensive observation in the field. Other plates, such as X., representing the Agassiz Amphitheatre in the Uinta Mountains, and XIX., in which a ridge of Archæan quartzite in the Humboldt Range is depicted, are wonderfully striking reproductions of the remarkable scenery of the district. In a series of plates illustrating the saline springs, we have the peculiar features of the great plains also presented to us in a very vivid manner.

Volume IV. consists of three parts. In the first of these a series of fossils from all the formations, from the Silurian to the Tertiary inclusive, are described by the late F. B. Meek. This part is illustrated by seventeen lithographic plates of great excellence. The second part is by James Hall and R. P. Whitfield, and describes certain new forms, from the Primordial to the Jurassic; it is illustrated by seven plates.

The third part of the volume is devoted to the description of the habits of the various species of birds met with during the several expeditions. It is from the pen of Mr. Robert Ridgway, the zoologist attached to the staff.

The United States Government is to be congratulated on having been able to secure such valuable illustrations of the natural history of their extensive and interesting territories as are contained in the splendid volumes before us, and the value of these contributions to science is greatly enhanced by the liberality with which they have been distributed among scientific workers and public libraries in every part of Europe. We shall look forward with much interest for the appearance of the other volumes of the series.

J. W. JUDD

OUR BOOK SHELF

Tent Work in Palestine. A Record of Discovery and Adventure. By Claude Regnier Conder, R.E., Officer in Command of the Survey Expedition. Two vols. (London: Bentley and Son, 1878.)

THIS is the first substantial result of the survey of Palestine, which has been going on for the last few years. It